

ATTENTION: BOX AFTER FINAL  
RESPONSE UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE REQUESTED  
EXAMINING GROUP 2879

PATENT  
Attorney Docket No. 4931.0039

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
)  
Myung-Ho PARK )  
)  
Application No.: 09/090,406 ) Group Art Unit: 2879  
)  
Filed: June 4, 1998 ) Examiner: V. Patel  
)  
For: DISCHARGE SPACE STRUCTURE )  
OF PLASMA DISPLAY PANEL AND )  
METHOD OF FABRICATING ITS )  
BARRIER )

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

REQUEST FOR RECONSIDERATION

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In reply to the Final Office Action of April 5, 2000, and pursuant to 37 C.F.R. § 1.116, Applicant submits the following remarks regarding the patentability of the above captioned application.

In the Office Action, the Examiner objected to the amendment filed June 8, 2000, under 35 U.S.C. § 132 as introducing new matter; rejected claims 1-14 under 35 U.S.C. § 112, first paragraph, as not being in the possession of the inventors at the time the application was filed; and rejected claims 1-14 under 35 U.S.C. § 112, first paragraph, as lacking enablement.

In response to the pending rejections, Applicant respectfully asserts that no new matter was introduced to the specification through the amendment of June 8, 2000, that a person having ordinary skill in the art would understand that Applicant was in possession of the invention as recited in the claims as amended in the June 8, 2000, amendment, and that the specification as originally filed provides complete support and enablement for the claims as they are currently presented.

Applicant will hereby provide an explanation of how each of the pending claims is both disclosed and enabled in the specification as originally filed.

Claim 1 as it is currently presented recites:

*A plasma display panel, comprising:  
first and second substrates opposite each other;  
a plurality of linear parallel barriers formed on the first substrate;  
a plurality of raised portions extending substantially perpendicularly  
between adjacent barriers; and  
a plurality of discharge spaces, each space being formed between  
the first substrate and the second substrate and being defined by two  
adjacent barriers and two adjacent raised portions.*

The field of the invention section of the specification states that the present invention is directed to "a plasma display panel (referred to . . . as PDP)." The preamble of claim 1, therefore, is supported in the specification as originally filed.

The summary of the invention section at page 4, lines 14-18, teaches that "the discharge space structure of the plasma display panel [includes] first and second substrates opposite each other." The first element of claim 1, therefore, is supported by the specification as originally filed.

The last three elements of claim 1 are dealt with jointly through the following discussion. The relationship between the individual claim elements and the specification as filed will be fully addressed.

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The field of the invention section also states that the invention is directed to "a discharge space of a PDP . . . in which the center of each discharge space formed by barriers has a height different from that of a boundary between discharge spaces adjacent to each other." The center of each discharge space of the present invention, therefore, has a central height being different from the borders between the discharge space and the adjacent surrounding discharge spaces.

As discussed in the prior art section of the specification, the PDP includes a front substrate 1 and a back substrate 2. The back substrate 2 has a plurality of barriers 3 shown in FIG. 1 as a plurality of parallel linear barriers. These parallel linear barriers 3 are disclosed as being perpendicular to sustain electrode lines 6 (page 1, lines 14-16). As discussed at page 3, lines 19-21, "[i]n the conventional discharge space structure . . . all the centers of the discharge spaces and the boundary between neighboring discharge spaces have approximately the same height, as shown in Fig. 3." The disclosed problem of the prior art arrangement, therefore, is that cells that horizontally lie adjacent to each other are separated by barrier layers 3 (see, e.g., Fig. 1), however, discharges that occur in discharge spaces that lie vertically adjacent to each other in a single stripe between two barrier layers 3 "can be easily diffused between cells which vertically lie adjacent to each other, and thus visible rays generated by the fluorescent layer intrude into each other in the same stripe during ultraviolet rays discharge, creating color spread." The lack of barriers between discharge spaces that lie vertically adjacent, therefore, leads to the problem of color spread.

The present invention as described in the summary of the invention section is to improve the prior art discharge space structure such that "the center region of each

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discharge space formed by barriers has the height different from that of the boundary region between discharge spaces adjacent to each other, so as to prevent undesirable discharge from occurring in the neighboring cells, to remove color spread *in the same stripe.*" (emphasis added). The prior art solution of separating discharge spaces that lie horizontally adjacent remains, with the addition of separation for discharge spaces that lie vertically adjacent. This section of the specification, therefore, teaches that adjacent discharge spaces all have barriers between them to avoid the undesirable discharge, *i.e.*, that both vertically adjacent and horizontally adjacent cells have barriers interposed between them instead of only the horizontally adjacent cells as disclosed in the prior art.

Fig. 5 of the present invention corresponds to Fig. 3 of the prior art with the addition of barriers 103 formed between discharge spaces that lie *vertically* adjacent. The boundary regions A between cells that lie vertically adjacent of the present invention have the additional feature of barriers 103 in order to prevent the prior art problem of undesirable discharge from occurring in vertically adjacent cells in the same vertical stripe. The present invention, therefore, adds to the vertical barriers 3 between horizontally adjacent cells of the prior art implementation (Fig. 1) horizontal boundary regions 103 between horizontally adjacent cells (Fig. 5).

The mask used to form the vertical and horizontal barriers of the present invention is shown in Fig. 7. The specification teaches that "[t]he mask used for the exposure process has a horizontal pattern 110 for exposing the barrier, and a vertical pattern 111 for forming boundary region A between neighboring cells in the same stripe, which is perpendicular to the horizontal pattern." As would be understood by a person

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having ordinary skill in the art, horizontal pattern 110 is used to form the barriers 3. This teaching, therefore, supports the recitation of a plurality of linear parallel barriers formed on a first substrate (the second element of claim 1). Further, vertical pattern 111 is used to form the additional barrier elements provided which are substantially perpendicular to the barriers 3 (Fig. 7). This teaching, therefore, supports the recitation of a plurality of raised portions extending substantially perpendicularly between adjacent barriers (the third element of claim 1).

As noted above, the centers of the discharge spaces are disclosed as having heights different from those of the surrounding boundary regions. As would be understood by a person having ordinary skill in the art from the above discussion of the specification, and as shown in Figs. 5 and 7, discharge spaces are formed between adjacent pairs of barriers 3 and adjacent pairs of raised portions 103 (the last element of claim 1).

In view of the above, Applicants respectfully assert that claim 1 is fully supported by the specification as originally filed, and that all of the pending rejections of claim 1 should be withdrawn.

Regarding dependent claim 2, the additional features of this claim are supported in full by the disclosure of barrier layer 103 and fluorescent layer 105 of Fig. 5 and the accompanying text.

Regarding dependent claim 3, the additional features of this claim are supported in full by the summary of the invention section of the application, which discusses the present invention as a solution to the prior art problem of undesirable discharge in neighboring cells.

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Regarding dependent claim 4, the additional features of this claim are supported in full by Fig. 8B and the accompanying text in the specification.

Regarding dependent claim 5, the additional features of this claim are supported in full by Fig. 5 and the accompanying text in the specification.

Regarding dependent claim 6, the additional features of this claim are supported in full by Fig. 8A and the accompanying text in the specification.

Regarding dependent claim 7 and 8, the additional features of these claims are supported in full by Figs. 5, 8A, and 8B and the accompanying text in the specification.

Regarding dependent claim 9, the additional features of this claim are supported in fully by the teaching that the centers of the discharge spaces are at a different height from the border regions as discussed above and in view of Fig. 5 and the accompanying text in the specification, which shows the centers of the discharge spaces as being decreased in height from the boundary A between two discharge spaces.

Regarding dependent claims 10 and 11, the additional features of this claim are supported in full by Fig. 5, which shows spherical discharge spaces.

Regarding independent claim 12, this claim is supported by the specification as originally filed for essentially the same reasons expressed above with respect to claim 1.

Regarding dependent claim 13, this claim is supported by the specification as originally filed by fluorescent layer 105 of Fig. 5 and the accompanying description in the specification.

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Regarding independent claim 14, this claim is supported by the specification as originally filed for essentially the same reasons expressed above with respect to claim 1.

In view of the foregoing remarks, Applicant submits that the claimed invention is fully supported by the specification as originally filed, was in the possession of Applicant at the time of filing, and is fully enabled by the specification. Further, for the reasons expressed in Applicant's previous response the claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests the entry of this Request for Reconsideration, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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